Welcome to the final dissemination of

IEA-AMF Task 61

Remote Emission Sensing (RES)

as a means of detection and enforcement of gross-polluting vehicles

Technology Collaboration Programme
by iea

Empa
Materials Science and Technology

ivl
Swedish Environmental Research Institute

Ministry of Environment of Denmark
Environmental Protection Agency

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Agenda

09:00 Welcome & introduction, project objectives & scope

09:15 The RDE legislation; PEMS opportunities & challenges

09:45 What can we learn from RES studies in China

10:15 Short break

10:30 What can we learn from RES studies in Europe

11:00 Understanding on-road emissions by advanced exhaust plume modelling

11:30 Conclusions / Q&A; Discussion / Wrap-up

12:00 End of webinar

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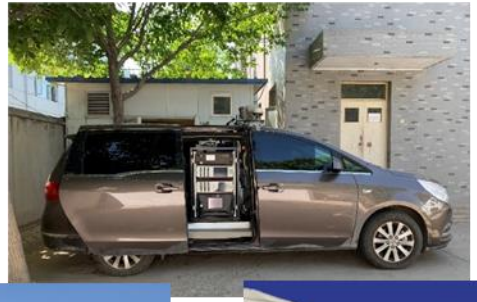
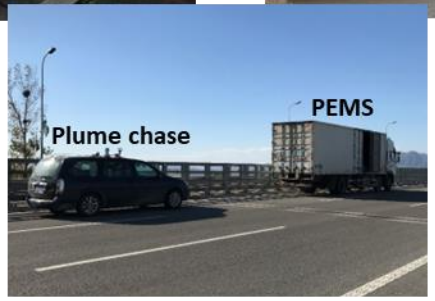
Background

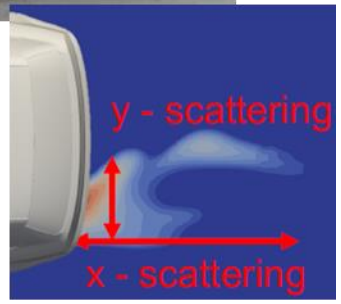
- With the most recent emission legislation in the EU (i.e., Euro 6d), **remote emission sensing (RES)** has become an optional element in **ISC testing**.
- Further, technology development in recent years has offered a variety of **new RES instruments and approaches**. In Task 61 we label these **RES Type 1** (conventional/commercial), **Type 2** (point sampling) and **Type 3** (plume chasing).
- RES possesses advantages that **complement conventional measurement technologies** used for various types of emission testing (onboard, i.e., PEMS, chassis dyno, engine bench, stationary vehicle tests, etc.), but use of RES for such purposes has been rather limited in the past, especially in Europe.
- The Task combination of expert groups of all types of RES, PEMS and traditional **emission measurements** methods, and of **advanced modelling** of exhaust plumes, is believed to contribute to new knowledge and innovative ways on how to maintain vehicles‘ lifetime emission performances within and beyond legal limits.

Objective

- To evaluate and propose how remote emission sensing (RES) can be used - for policy purposes as well as for direct enforcement – to detect high-emitting/gross-polluting vehicles in real-world traffic.







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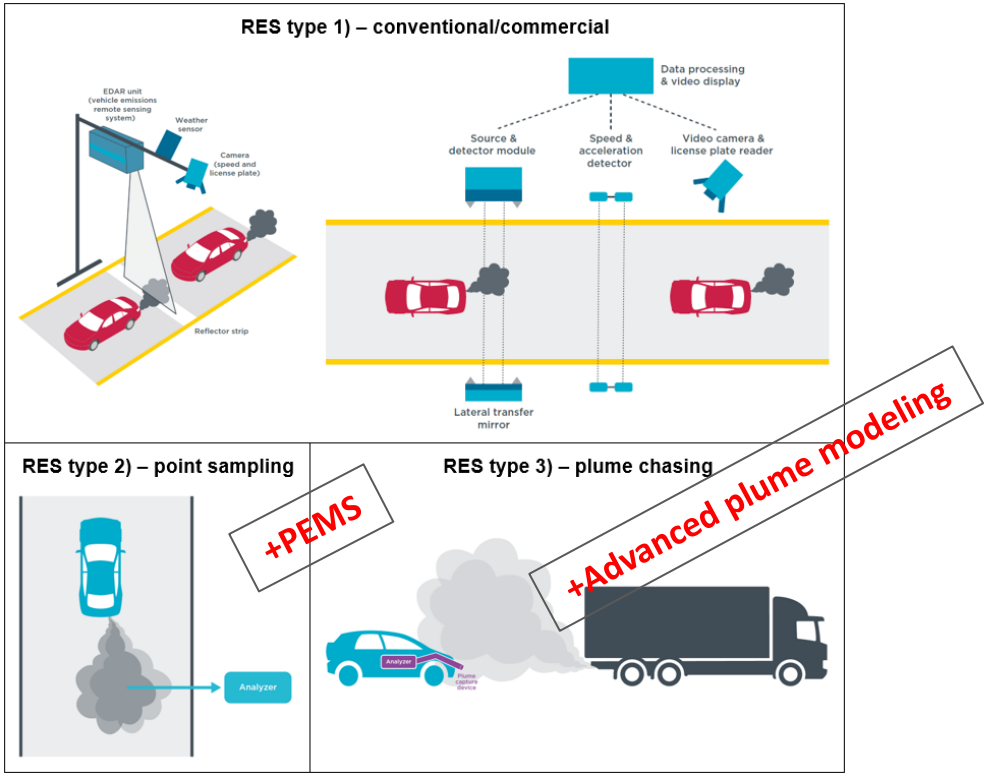
Key Question

- How does the various existing and further developed RES technologies apply, perform and compare (e.g., against conventional emission testing) for the identification of high-emitting road vehicles and how can this be further improved?



Scope/activities

- Inventory and consolidation of **existing RES and other RDE data and associated research findings** in Europe and China.
- Comparison and **evaluation of the performance of different RES technologies** vs legislative emission measurement technologies and concept
- Build-up and **validation of simulation tools for** the flow and species dispersion of **exhaust plumes** in vehicle wakes to analyze the effects of different parameters (measurement, vehicle, climatic conditions) to further improve RES testing
- Evaluation and proposal of the **use of RES to detect individual high-emitting vehicles** for direct enforcement
- Evaluation and proposal on the **use of RES for emission legislation and air pollution policy** purposes
- Results synthesis and report writing